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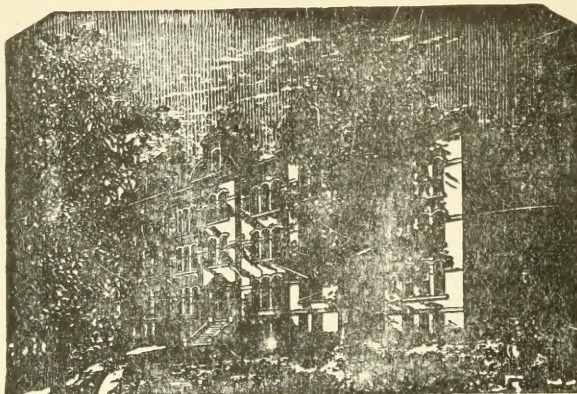
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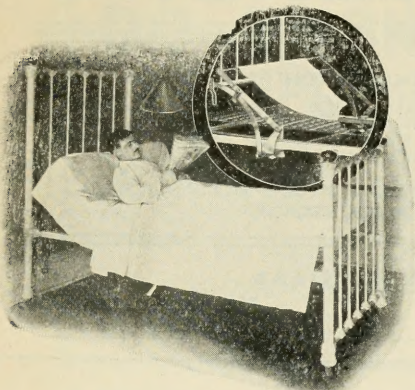
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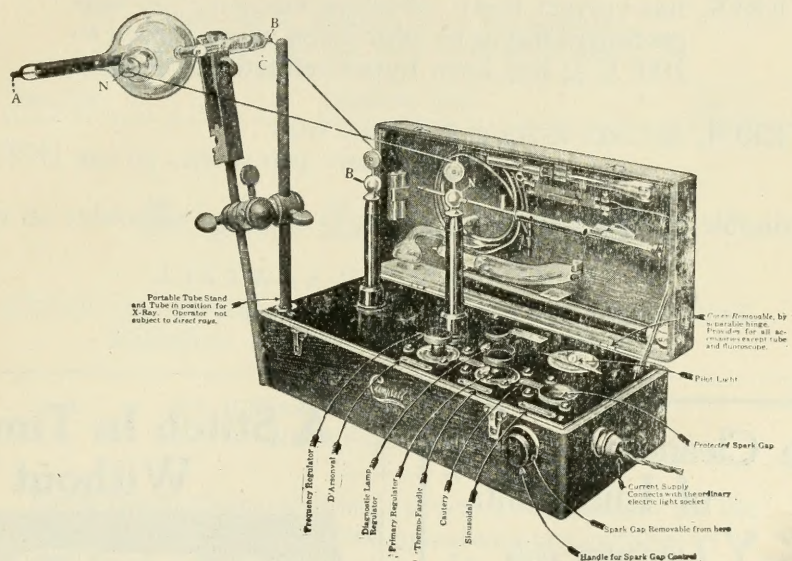
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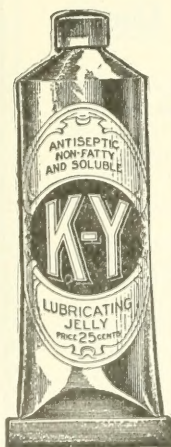
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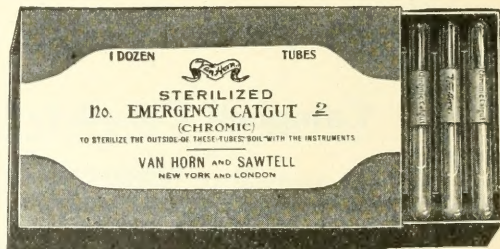
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CHARLES S. BRIGGS, A.M., M.D., Editor.
W. T. BRIGGS, B.A., M.D., Associate Editor.

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Original Communications

CASES OF RENAL TUBERCULOSIS ILLUSTRATING MODERN METHODS OF DIAGNOSIS.*

BY HOWARD S. JECK, PH.B., M.D.,
New York, N. Y.

Renal tuberculosis occupies a pre-eminent place in the list of those diseases whose initial symptoms are apparently so insignificant and whose onset is so insidious that the true state of affairs is either entirely overlooked or else recognized only after it is too late to accomplish the most good.

A large number of the cases that come under our observation, exhibit symptoms which are referable solely to the bladder in the guise of a mild cystitis, the patients perhaps complaining only of a slightly increased frequency of micturition by day, not even being disturbed once at night to empty his bladder. Here the temptation on the part of many physicians at once arises to treat such cases lightly—doubt-

*To the courtesy and generosity of Dr. Edward L. Keyes, Jr., with whom I am now associated, I owe the privilege of employing the above cases, which have been selected from his wonderful storehouse of instructive case histories.

less to dismiss the patient with assurances that his condition is one of a mild inflammation of the bladder which, in all probability, will soon right itself after an irrigation or two, plus a few tablets of urotropin.

On the other hand, the onset may be so stormy or symptoms so terrifying, that we at once think of all the horrible conditions to which the genito-urinary tract is heir. But once our suspicion is aroused as to the possibility of tuberculosis of the kidney, the question of an exact diagnosis, the question of which kidney is involved, and the condition of the other kidney (on which naturally depend the course to pursue) are matters not always easy to decide.

To this end, cystoscopy, ureteral catheterism, renal function tests and the X-ray, lend themselves as invaluable aids. But we must remember that even with so much assistance at hand, the pitfalls are many and it is with the hope of pointing out a few of the former as well as emphasizing the more certain means of diagnosis, that I feel justified in this presentation.

Case I—E. P. was first seen in September, 1907. He then complained of an ulcer on the penis and frequent and painful urination. One brother had died of pulmonary tuberculosis. The ulcer had appeared a year previously, beginning with a redness of the meatus, which persisted, with superficial ulceration. No history of exposure. In April, 1907, the dysuria began, and at the time he first consulted Dr. Keyes, he was urinating every two hours, day and night. He had also experienced a chill three weeks before this time.

The patient had never noticed any blood in his urine. His weight had dropped from 170 to 149. Physical examination showed his kidneys to be insensitive, and his prostate and seminal vesicles were negative.

The urine was acid, showed a fair amount of pus and albumin, but no casts. No. T. B. bacilli found.

A month later the patient was seen again. In the interim he had suffered an attack of fever (T. 105), and also an intense pain in the right testicle and right side, lasting four

days. The urine suddenly showed a great increase in pus after which relief followed. All this time the prostate remained unchanged, but the right kidney was now tender on palpation.

During the next couple of months the patient showed a quite perceptible general improvement on anti-tubercular treatment, but had at times passed some blood in his urine.

However, in January, 1908, he began to have pain all over the abdomen. Cystoscopy having been unsuccessfully attempted two months previously, separate urines from the right and left kidney were now obtained by means of the Luys' urine separator and showed the following: From the right kidney, 14 cc. of urine, containing 2.4% urea, and a slight amount of pus; from the left kidney $\frac{3}{4}$ cc. of urine, a very little urea and a large amount of pus. A nephrectomy of the left kidney a few days later revealed a small tubercular pyonephrotic kidney, with an apparently normal ureter.

In April, 1910, this patient was heard from directly for the last time. By virtue of his social status he was forced to lead a life which was not in conformity with his personal welfare, doing hard manual labor most of the time. And while he has suffered various setbacks, he always managed to readily recuperate under enforced rest and anything like proper hygienic conditions. He had even gained considerable weight when, another setback occurring, due to over-exertion, he went to the Adirondacks, immediately contracted pneumonia, and died within a week of its beginning.

While the above case does not serve especially well to illustrate a pre-operative diagnosis of renal tuberculosis, inasmuch as there was no X-ray and no T. B. bacilli were ever found in his urine, it does bring out a certain fairly infrequent symptom which would be extremely—I might almost say—fatally, misleading in the diagnosis of surgical conditions of the genito-urinary tract but for other aids in diagnosis. I refer to the phenomenon of crossed renal pain. That this was renal involvement of a kind requiring surgical interference was well evidenced by the blood and pus in his

urine, together with his history of pain at various times. But had we gone strictly by the pain, whose location was chiefly in his right testicle and right side, the patient would have been the victim of a nephrotomy, at least of his right kidney. However, the presence of 2.4% urea with a slight amount of pus (probably pus from the bladder as the Luys' separator does not always preclude this possibility) from the right ureter as against a very slight amount of urea and a large amount of pus from the left ureter, dispelled all question of doubt as to which kidney should be explored.

Case II, E. B.—Male, gave the following history: A father and two brothers died of pulmonary tuberculosis. Others in the family had lived to ripe ages.

At the age of 31, the patient passed blood in his urine. Three years later he experienced right renal colics and slight irritability of the bladder. The colics continued every few weeks for seven years. Then, because of an attack of intense bladder symptoms, and profuse hematuria, Dr. Charles McBurney diagnosed the condition as renal calculus (this was in 1900—the pre-radiographic days), explored the kidney, and found nothing.

The operation relieved the renal colics. But the bladder still caused him untold agony, the patient urinating blood every two or three hours.

On January 16, 1908, eighteen years after the first symptoms of his disease, the patient consulted Dr. Keyes, having in the interval suffered three vain searches for stone and two cystoscopies, and having developed double tubercular epididymitis.

Physical examination revealed nothing except ridgy seminal vesicles. The urine was cloudy and contained a small amount of albumin, pus, red blood cells, a few hyaline casts and many T. B. bacilli.

The X-ray revealed an irregular shadow in the right kidney region, which the radiographer reported as "consistent with a diagnosis of renal tuberculosis."

Cystoscopy was now tried again, but failed on account of the extreme pain attending it. Recourse was then had to the experimental polyuria test, which showed fairly good, though deficient renal function. The diagnosis of tuberculosis of the right kidney being now fairly certain, the kidney was removed in April, 1909. Though the pelvis was uninvolved, the parenchyma was riddled with abscesses, the latter confirming the diagnosis.

I had the pleasure of seeing this case as recently as February 2d of this year. While the function of his remaining kidney is evidently quite poor, as shown by an output of only 16% of phenolsulphonephthalein (injected intravenously) in the first half hour and 10% during the second half hour, he says he feels fine and has suffered only moderate inconvenience due to frequency. His weight is now 178 and has remained so for quite a time. While his urine still contains pus, a careful search failed to reveal the presence of T. B. bacilli. Could Dr. McBurney have availed himself of the use of the X-ray and our present renal functional tests, he doubtless would not have been satisfied with a mere exploratory operation. And, finally, eighteen years later, when the X-ray, together with the patient's symptoms and urinary findings, did point out the true diagnosis, and the kidney which was involved, or most involved, it remained for the polyuria test to decide the question of operating at all. For, while the right kidney was tubercular without a doubt, who could offer any prognosis as to the outcome in the event of a nephrectomy, without some knowledge of the condition of the other kidney? That the X-ray showed nothing definite on that side, told us nothing of the kidney's functional power.

Since cystoscopy, or the passage of any instrument of any size into the bladder could no longer be endured, reliance had to be placed on the experimental polyuria test. This showed fairly good renal function *somewhere*, and inasmuch as the X-ray had shown what was probably a considerable involvement of the right kidney, it was inferred that the "fairly good renal function" belonged chiefly to the left kidney.

The case, also well emphasizes, the fact that renal tuberculosis may exist for a long time and then respond to proper treatment.

Case III, G. S.—In October, 1904, this patient then nineteen years of age, consulted a physician in Albany N. Y., because of moderate frequency of micturition by day and night, attended by much terminal pain and blood on a few occasions. T. B. bacilli were found in his urine at that time, which gave a positive guinea-pig test. Cystoscopy was performed and as a result the patient had chills, a rise in temperature to 104, and some pain over his left kidney. A diagnosis of tuberculosis of the prostate was made and the patient put on treatment which resulted in an amelioration of his symptoms for some time.

In January, 1909, Mr. S., first came to Dr. Keyes on account of frequent urination, incontinence, and a swollen testicle. There was no family history of tuberculosis, and his previous history was that given above. A twenty-four hour specimen of urine gave the following analysis: Amount 2070 cc., sp. gr., 1014, acid, urea 1.2%, a trace of albumin, no sugar, white blood cells, red blood cells, but *no tubercle bacilli*. On physical examination it was found that he had a lump in the left lobe of his prostate and also in the tail of his right epididymis. There was in addition, a dense stricture extending from the peno-scrotal angle to the triangular ligament.

During the next few days, the stricture was dilated sufficiently to permit a cystoscopy which showed the bladder to be much ulcerated. The right ureteral orifice was considerably congested, and the left resembled an irregularly-shaped volcanic crater. It was impossible to catheterize either ureter.

The X-ray report was pyonephrosis of the left kidney. After an injection of 2 cc. of phloridzin, no sugar appeared in the urine until two hours and fifteen minutes had elapsed. A month later, on account of his stricture having retracted, internal and external urethrotomy were done, and

it is of interest to note that in place of prostate, there was a cavity as big as a plum, with hard tubercular walls. Six days later, another attempt was made to catheterize the patient's ureters without success. His bladder picture was the same as before. Likewise unsuccessful was an attempt to pass a Luy's urine separator. At this time, another phloridzin test gave no sugar at the end of four hours. Two experimental polyuria tests made a week apart, showed rather poor functioning power of the kidneys. Although it was impossible to obtain separate urines from the kidneys, in view of the functional tests all pointing to an involvement of one or both of these organs, it was decided to perform an exploratory nephrotomy especially since the patient was apparently getting worse in spite of all treatment.

The location of the pain in his early history and the X-ray report certainly indicated the left kidney as the more probable one to be affected. Therefore, on March 13, 1909, a nephrotomy of the left kidney was done. The kidney was low and lay almost transversely. The pelvis and ureter were entirely uninflamed but much dilated, the ureter being larger than a lead pencil. An incision into the ureter allowed about 100 cc. of apparently clean urine to escape. A soft rubber catheter was introduced into the ureter and stitched into the lumbar wound. Now comes the startling feature of the whole story. Immediately after the operation, *all urine stopped coming from the urethra and perineal wound* and in its stead came only pus, while apparently normal urine flowed from the tube in the loin. This continuing to be the case, forced the conclusion that the right kidney was either absent or practically destroyed; the latter view was substantiated by an excellent X-ray, subsequently made, showing a small atrophied kidney on the right side.

The patient made an uninterrupted recovery from his kidney operation, but his perineal fistula never completely healed.

Three years after his nephrotomy he was re-operated upon in order to close his perineal fistula and died as a result of

shock. In the meantime, however, he had gained much in weight, had improved generally and returned to his work. No. T. B. bacilli could be found in his urine at the time of his last operation.

Here, then, is an instance in which the X-ray, which had rendered so valuable a service in the preceding case, deceived the surgeon and then later redeemed itself, to some extent, by demonstrating the size of the right kidney. For the radiograph of the left kidney showed a rather typical picture of pyonephrosis. Hence, obviously, the lesson to be learned from this is that under certain conditions, water may throw a shadow similar to that of pus, so that it is not always possible to differentiate a pyonephrosis from a hydronephrosis by such means.

The crater-like appearance of the right ureteral orifice, though quite suggestive, was hardly evidence enough to warrant a diagnosis of tuberculosis of the right kidney, but had it been possible to catheterize both ureters or even only one (either one), the question of the involved kidney, the approximate amount of involvement, and the condition of the opposite kidney, could have been readily cleared up.

Case IV.—J. L. Age 30, was admitted to Dr. Keyes' service in Bellevue Hospital in May, 1912, with the simple, but all-important, history of hematuria and frequency of urination for one year. A physical examination of the lungs revealed probable tubercular lesions. Cystoscopy with catheterization of the ureters was performed at once, showing pus from the right ureter whose orifice was swollen, with deficient function of the right kidney. A microscopical examination of the urine from this kidney showed the presence of Gram negative cocci (which could not be grown, however,) and later a culture of the bladder urine showed Gram negative cocci which were positively identified as gonococci.

Finally, T. B. Bacilli were found in the bladder urine. Suspecting the right kidney of being tuberculous, 25% argyrol was injected into the right renal pelvis, and the right

loin X-rayed. An excellent radiograph showed small round shadows throughout the kidney, and a mouse-eaten appearance of some of the papillae, a typical tuberculous picture. This diagnosis was subsequently confirmed by the finding of T. B. bacilli in the urine from the right kidney. The right kidney was accordingly removed, and found to be rotten throughout. It was likewise full of argyrol. When last heard from (February, 1915), the patient had gained considerable weight despite his lung condition.

The above case was selected mainly to show what was doubtless a gonococcus infection engrafted on to a tubercular kidney, as it is only reasonable to suppose that the Gram negative cocci obtained from the right ureter were the same as those in the bladder which was subsequently found to be gonococci.

Aside from the readiness with which the diagnosis of tuberculosis of the right kidney was made (by virtue of the T. B. bacilli in the urine, the swollen right ureteral orifice, pus from the same, and deficient function of the right kidney by the phenolsulphonephthalein test, the case is of further interest because of the corroboration of this diagnosis by pyelography after the injection of an organic silver preparation.

Case V.—P. B., 27. Entered St. Vincent's Hospital in February, 1911. Family history of no importance; was a heavy drinker; denied venereal disease. Pneumonia two years before admission. On his neck was a scar from a gland which suppurated at that time. Hematuria was his chief urinary symptom. Six years before he had had profuse, spontaneous and painless passage of blood in his urine, which stopped after a few days. When he was admitted to the hospital he had been bleeding again, but there were no other symptoms referable to his urinary tract. He had lost no weight. Immediately after entering the hospital he had delirium tremens, which lasted two weeks. At the end of this time, physical examination showed a very large low kidney on the right side and a slight pulmonary dulness at

the base of his left lung. Cystoscopy revealed a normal bladder and normal ureteral orifices. The ureters were readily catheterized, the result of functional tests made being as follows:

Right kidney.—5 cc. of urine (in eight minutes) containing numerous casts, a few w. b. c., but no pus; 1.3% urea.

Left kidney.—3 cc. of urine (in eight minutes), containing no casts, no pus; 0.3% urea.

One cc. of phenolsulphonephthalein was now injected intravenously. It appeared in eight minutes from the right side and in nine minutes from the left. During the next thirty minutes, the right kidney excreted 3% of the drug, while only a trace was obtained from the left side; in the following thirty minutes, the right side excreted 5.6% while the left showed only 1.7%.

The above findings hardly seemed to jibe with the patient's symptoms, and physical examination which suggested tumor of the right side. However, the amounts of urea and phenolsulphonephthalein excreted from the right side were so much greater than the amounts from the left side, that this fact certainly pointed to at least a greater involvement of some kind of the left kidney, irrespective of the condition of the right.

Accordingly the left kidney was exposed and its upper third found to be a cheesy mass, obviously an old tubercular process. The patient was then turned over and an exploratory incision revealed a low-lying right kidney which was hypertrophied to twice its size, but otherwise apparently normal. The patient was now turned back and his left kidney removed. Both wounds healed by primary union, the patient making an uneventful recovery.

In later reviewing the case Dr. Keyes states that he would have been warned of tuberculosis on the left side had he but seen some pus in the urine from that side, for, as he further says, "casts on one side and deficient function with pus and without marked enlargement of the kidney upon the other side, is very suggestive of unilateral tuberculosis." The

case is of further interest on account of the greatly hypertrophied right kidney. Aside from demonstrating the capability of one organ to take over the work of its impaired mate, it should emphasize the necessity of keeping in mind such possibilities in making a diagnosis.

Selected Articles

PUERPERAL INSANITY.

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The request from the secretary of this society is a command when he asks me to read a paper, otherwise I should be more profuse in my apology for the modest effort I present to you tonight. For me to present to the gentlemen of achievement before me any of my rare dashes into the field of major procedures in gynecology or obstetrics would be farcical and I was casting about for something of interest for us all to think about together tonight when two post partum patients in the Low Maternity one afternoon developed mental disturbances.

As we must all admire the German attitude of continually interrogating, so we must, when something unusual occurs, say "Why" and "When?" and then become Yankees again and say "What are we going to do about it?" Every few years we must take stock of just such questions and it is perhaps a reasonable duty for some of the younger and less active members of this society like myself to make the inventory.

DEFINITION.

Is it an entity? In Peterson's "Obstetrics," Lewis, of Chicago, tells us that the opinion is gaining ground that it is a coincidence and without etiological relation to maternity and that to childbearing can we probably assign only an exciting etiologic relation in the production of an outbreak of insanity. The study of so-called puerperal insanity then resolves itself into the study of the different types of mental disorder

as they may occur and reveal themselves in a pregnant, parturient or puerperal woman. Pp. 825-830.)

Lee, of Manchester, England, in his exhaustive treatise, "Puerperal Infection," refers very casually to the maniacal symptoms of the infection. (P. 290.)

Williams, in his "Obstetrics," however, speaks assuredly of puerperal insanity and gives definite etiological factors, two of which are the result of childbearing. (Pp. 915, 916.)

Hirst, in his "Practice of Obstetrics," feels that it is an entity and more distinctly a disease of this period because of the etiological features he mentions and which will be referred to later. (P. 248.)

Webster, in his "Text Book of Obstetrics," discussed it as an entity under a separate heading, but not by any etiological factor does he separate it from other psychoses. It is in the frequency of its occurrence that he quotes from Clouston, of Edinburgh, *viz.*, one in 400 labors, in which Hirst concurs that we may infer it is a distinct disease. (P. 613.)

Berry Hart, of Edinburgh, in his "Guide to Midwifery," says "Insanity may come on in women" while childbearing, and refers to predisposing causes, but gives no well defined picture of the condition. (P. 574.)

Wright, of Toronto, in his "Text Book of Obstetrics," refers to insanity of pregnancy: symptomatically ordinary insanity, but etiologically speaking, the statement that constipation is frequently marked in the barest allusion. (P. 430.)

De Lee, of Chicago, "During the puerperium and lactation, insanity is a not infrequent disease," and from his discussion of it he very apparently holds it as an entity. (P. 373.)

Tweedy & Wrench discuss insanity at more length than any of the other authors and must be convinced that it is a definite disease. (P. 401.)

Edgar refers to the "essential puerperal psychoses" and discussed their etiology and time of occurrence very definitely. (P. 800.)

The most comprehensive work on this subject, however, is that in the *Journal of Obstetrics and Gynecology* of the British Empire, of Robert Jones, Superintendent of London County Asylum, Claybury, England, and to quote him is most convincing. "Of the specially puerperal cases—and it is in this period that I recognize a special form of insanity—more suffered from mania than melancholia."

Having covered a fair field of literature in this subject of definition we must now seriously consider the question—Have we or have we not a definite disease? Shall we go on to discuss this subject at greater length or shall we put it in the category of a broken wrist or an attack of diphtheria, either of which might occur after the time that any woman had had a baby? If I should say the latter, I should have to conclude this paper and take my seat. So let us go a little farther along and discuss its frequency before the question is answered.

FREQUENCY.

In reference to its frequency, we find among the authorities a great deal of variation and it again shakes our faith in the value of statistics.

In an edition of forty-one years ago of Fordyce Barker's "Puerperal Diseases," he gives the ratio of cases of puerperal mania to total labors in Bellvue as 1-80. I have purposely referred to the age of this book because I shall refer to it again in discussing an attributed etiological factor. Not long ago after this work appeared, McLeod took the statistics of births in England and Wales for four years (1878-82) and found the proportion of women committed for puerperal insanity was 1,794—3,500,000 labors, or 1-2000. Baker himself was interested in the variation of statistics and explains part of the difference from the fact that there were many unmarried women at Bellevue; and while there were also among the foreign records, in the old countries, the fact of being a mother and not a wife was felt far less keenly, if at all than in America! (Pp. 160-191.)

Williams refers to more modern statistics of Berkley and of Jones, who noted it in 1 in 616 and in 1,100 labors respectively, but Williams's own experience has been less frequent.

Hirst states "About one in 400 women confined become insane;" a flat if not grammatical statement, and this proportion agrees with, if not taken from, the experience of Clouston of the Edinburgh asylum. Hanson's figures are about the same, 1-386.

Let us get at this subject of frequency from the opposite point of view. Among cases of insanity how many are associated with childbearing? Clouston, of Edinburgh, among 1,500 women, found 10 per cent were classified as suffering with puerperal psychoses and most of the earlier figures (and here we have the first real thought) before the anti-septic era give similar percentages—the New York State hospitals from 1888 to 1895 give only 5 per cent as puerperal in origin. Before we draw a too hasty conclusion, let me quote Lane based on observations in the Boston Insane Hospital for ten years, "that insanity associated with childbirth occurs only one-half as frequently as does insanity among women in general of childbearing age. The vast majority of women who become insane are between the ages of twenty and fifty. The task of bearing and nursing children occupies a considerable portion of the time of the average woman during these ages. Therefore, we should expect a large proportion of cases of insanity to begin during such time even without casual connection." According to Lane's view the childbearing process gives a certain degree of immunity to insanity instead of predisposition thereto!

On the other hand he points out that there are many more single than married women in asylums—perhaps unmarried on account of their defects. Hirst says of all cases of insanity in women about 8 per cent have their origin in the childbearing process, while Berry Hart gives the lower percentage of five. De Lee, in his textbook—the most recent at my command—gives the high percentage of 10-18 of female inmates affected at this time.

The most reliable figures I have yet obtained came recently to hand through the courtesy of Dr. Ziegelman, one of the resident psychiatrists at Kings County Hospital, and he tells me that of 454 female admissions to the observation ward there, from October 1, 1914, to March 18, 1915, there are twenty-six cases of puerperal insanity, practically 5¾ per cent. These are not very different, except suggestively lower than Jones, of London, who, in 1903, found from 6.4 per cent, private, and 8.1 per cent poor class patients then in the London Asylum.

With so much information, vague and meagre as it is, let us pause a moment and weigh the evidence. As our ideas of pathology change with time, so must our viewpoint as to morbidity and the most recent ideas must settle such questions.

Williams, Hirst, Edgar, Webster, De Lee, Jones and Tweedy & Wrench, refer to it absolutely as a disease. Wright of Toronto and the Englishmen Berry Hart and Let are more vague, and only Lewis, of Chicago, calls its occurrence a coincidence. When we consider its frequency, if only we accept the very conservative estimate of Williams and the definite figures from McLeod, of England, of 1-2000 births and are not so radical as Hirst the obstetrician and Clouston the Edinburgh alienist, who state 1-400, to say nothing of Fordyce Barker's 1-80, we must feel that there is more than a coincidence, and if we consider the large percentage who are confined to asylums suffering from it, I feel we have all the evidence needed.

Causes must be studied before we can put pathology on a sound basis, to say nothing of diagnosis and treatment. Here again we find many authorities in disagreement and at times extremely vague.

Williams, of the school that; I think we all feel has, through the laboratory, magnified the science of medicine perhaps sometimes to the detriment of its art, says:

"Puerperal psychoses may be due to one of three causes: Infection, auto-intoxication, or direct liability of the nervous

system. Of these, infection is by far the most important. This fact has long been recognized, but it is only of late that the bacteria concerned have been identified, and then only in a small proportion of cases. In two of the three instances which have come under my observation, the infection was due to the streptococcus, and in the third to the streptococcus and colon bacillus."

Berkeley likewise reports a case due to the organism first mentioned. Auto-intoxication is also a frequent etiological factor, and it is probable that the vast majority of mental disarrangements following eclampsia are due to this condition. Ordinarily, insanity is regarded as a rare complication of eclampsia, though Olshauser observed it in 6 per cent of his 515 cases. According to Hansen and Picque infection and auto-intoxication are responsible for more than 80 per cent of all cases, while the remainder are to be attributed to other causes, occurring particularly in women afflicted with hereditary tendencies, "the exciting cause of the insanity being shock, extreme mental depression or the rapid loss of a large quantity of blood."

The general trend of investigation of etiology and pathology has been of course to ascribe definite tangible factors as the cause of definite organic changes, and we hear less and less of idiopathic diseases and functional conditions, and while the view of Williams may seem to be almost too definite, please contrast it with the causes ascribed by Hirst, which he divides into "predisposing — the nervous excitement of gestation in women predisposed by hereditary influence to mental breakdown, great reduction in physical strength and prolonged mental strain or worry * * * ; the exciting causes may be exaggerated anæmia, as from prolonged lactation, septicæmia; albuminuria; profound emotion or exaggerated fear of impending danger; remorse and shame of illegitimate pregnancy; the grief of a deserted woman; accident or hemorrhage; great physical or mental exhaustion. In my experience insanity in the childbearing

woman has almost always resulted from some profound emotion."

Webster, of Chicago, says: "Frequently there is a predisposing cause—e.g., bad heredity and prolonged mental or physical strain. Anæmia, sepsis, albuminuria, marked emotional disturbance and the pain and excitement of labor."

Berry Hart only mentions the predisposing causes of a neurotic constitution, too frequent pregnancies, too prolonged lactation, and in some cases the shock of a seduction ending in conception.

Wright, of Toronto, as I have stated before, says: "Constipation is frequently very marked,"—whether he means as a cause or a symptom is problematic.

De Lee, of Chicago, says: "Puerperal infection, mastitis, eclampsia and allied toxemias, post partum and other hemorrhages, especially if grafted on a bad heredity, exhausting labor and the drain of lactation are the most common causes. The attack may be developed by a violent psychic shock, such as the death of husband or child."

Tweedy & Wrench, of Dublin, give us nine subsidiary causes—drink, toxemia, post eclampsia, acute pain (the perineal stage), sepsis, severe hemorrhage, prolonged lactation, no marriage and heredity, laying emphasis on sepsis and hemorrhage in the puerperium.

Edgar says that "there is no doubt that the presence of puerperal sepsis in many of the cases is something more than a coincidence. Alienists assure us that since the introduction of antisepsis into midwifery the frequency of puerperal insanity has been marvelously diminished. Many cases of this type of psychoses are said to exhibit more the nature of delirium—such as is seen, for instance, in typhoid fever—than of actual insanity. Again, the coincidence of severe local infection has often been remarked, and gives color to the toxic theory; while a further coincidence of insanity of the puerperium with puerperal mastitis, phlebitis, and other inflammations remote from the genitals helps the assumption of this point of view. Of other special contributory

factors may be mentioned the exhaustion which follows delivery, extreme prostration being a well-known cause of certain psychoses or of low delirium. In this connection should be mentioned the influence of post-partum hemorrhage. In women already disposed to insanity the physiological adjustment which follows childbirth is doubtless sufficient to set up mental disorder. Other conditions which excite puerperal psychoses are the painful emotions.

Lewis, of Chicago, who, we must remember, does not call this a medical entity, says: "The inciting factor of insanity arising during the puerperal period are due, in from 70-80 per cent of the cases to either toxemia or infection. In the remainder no exciting cause beyond the general disturbance due to the bodily state can be assigned, * * * . The insanity arising in the lactation period is essentially due to exhaustion and inanition," occurring in women of the poorer, harder working, more improperly fed classes. "General weakness from other causes, such as may follow severe post-partum hemorrhage or recovery from septic infection, may be the exciting element."

Before we close the subject of its occurrence and cause, let us consider the illegitimacy and the number of the pregnancy ,etc. Of 203 strictly puerperal cases collected by Jones, of London, about 10 per cent were single and 33 per cent were primiparal. One patient had an attack of insanity after each of her twelve children and another with each of nine, both becoming subject to chronic incurable insanity at the climateric. In lactation cases the insanity did not commonly follow a first confinement, but appeared to be due to the strain of frequent pregnancies and the exhaustion of long continued nursing. Puerperal insanity is most common between twenty-five and twenty-eight; lactational between thirty and thirty-four.

Jones also gives data pro and con as to the causation of this condition. One of his investigators found always negative blood cultures while others have found, as did Williams, streptococci, staphylococci, and the colon bacilli. It was

rare for any of his cases to have fever and some were admitted as early as the second day. He also noted in some cases the signs of endo-toxin development. But he asks, "If these cases be toxic (and he means either chemical or bacterial), how is it that insanity occurs most often after the first confinement?"

Before we proceed to the subject of symptoms and pathology, let me suggest these conclusions: Our disease is decreasing in frequency, as all evidence shows us. We coincidentally are increasing our aseptic technique and obstetric skill and we are continually recognizing the different types of toxemias both bacterial and chemical, more quickly, with resultant more rapid institution of treatment. On the other hand the strong mental shock and emotions that come to women in connection with, or as a coincidence to, childbirth are getting no less in this world of ours and I feel that we must all agree that sepsis and toxemia in the puerperal and anæmia in the lactational types of insanity are our real causes:—the emotional factors being secondary or only the exciting causes in the majority of cases. The other cases are, however, those of lability of the mental and nervous systems of probable types and with the same exciting causes.

The pathology of many morbid mental states is, I am sure, poorly defined and not well worked out. Jones, in his very exhaustive, though hardly recent article in 1903, gives us, however, very suggestive thoughts on the subject. "Immediately after confinement the morbid and effete material which is taken into the maternal circulation during early uterine involution, must tend to produce in the predisposed a profound irritation of the nervous system, and especially so should secretion and excretion be modified by interference, chemical or bacterial, with the normal functions of the venous, lymphatic and other excretory organs." It is in the early stage of puerperium, the stage of septic infection, and by that I mean all bacterial disturbances, that the most violent delirium occurs.

The lactational type shows impoverished blood supply, uterine sub-involution, and general cachectic condition.

SYMPTOMS.

Williams has found that the puerperal psychoses are usually characterized by great excitement during the first few days, associated with all sorts of hallucinations. Later, the maniacal symptoms disappear and the patient passes into a condition of depression with frequently suicidal tendencies.

Lewis has found that there are seldom any prodromal, usually of sight and sound, and great motor and mental excitement, appear; later motor agitation, subsultus, expressions of fear and uneasiness. Toxic cases are similar, but not so severe. Progress toward recovery is gradual—hallucinations disappear and lucid intervals occur. Lactational cases come on slowly, hallucinations at first few and later more constant; not a type of melancholia, but a mild, exalted mania, with frequently suicidal tendencies.

Hirst's cases have been of mania, melancholia or profound lethargy, stupidity and mental confusion, and Webster's experience has been about the same.

Edgar feels that while most of the cases have been classed as mania, they are in reality hallucinatory insanity.

De Lee has found melancholia with suicidal intent most common, but has also observed mania with infanticidal tendencies, while Vinay holds that the maniacal forms are the most frequent.

Tweedy & Wrench have found that insanity of the puerperium is always associated with either severe anæmia from hemorrhage or with sepsis. The patient is first irritable and uneasy about unknown dangers. She had a headache, is constipated, she may refuse food or to see her child or husband, and sleeps badly, and finally becomes definitely maniacal and may have suicidal tendencies. During lactation the patient becomes gloomy, sleeps badly, and is constipated. Definite melancholia develops with delusions and suicidal tendencies.

PROGNOSIS.

All authorities disagree markedly on this most important aspect. Williams tells that the progress is three to six months and if longer the prospect is very poor, 20-40 per cent fail to regain mental equilibrium and 5-10 per cent die, this high mortality due, he feels, to the underlying infection and not the mental derangement itself, and with these figures Hirst is in practical accord.

Lewis tells us 25 per cent of the infection cases die, but the progress of toxic cases is not so bad. Death occurs usually from sepsis or the exhaustion on account of the motor excitement. Lactational cases recover in 50 per cent, and they take eight to nine months.

Webster quotes from Clouston of Edinburg that 75 per cent of his cases have recovered; one-half of those in three months and 90 per cent in six months, and occasionally recovery takes place after years of impaired mentality and, surprisingly, he states that there is probably a larger number of recoveries in acute and severe cases than in mild ones. Dr. Lee states that the prognosis is fair—recovery in the majority of cases in from six weeks to six months.

Edgar tells us that exhaustion is the usual cause of death but recovery is the rule even from the insanity; if not, it goes on to a terminal dementia or paranoia. A high pulse rate is a bad sign.

Berry Hart says the prognosis is good under proper treatment and the return of menstruation is such a good sign that emmenagogues should be employed.

Tweedy & Wrench say some 60 per cent of all cases recover, but if, as the patient gets fatter and stronger the mind does not improve, the prognosis is bad.

In the subject of treatment our authorities again differ, but not in the usual way. Webster briefly dismisses it with advising an asylum, as does Hirst, except in cases of refusal of families or friends to commit the patient, when general symptomatic treatment is necessary. Edgar and De Lee both are no more explicit. Berry Hart with his regard for

the return of menstruation, says when the patient gains weight to use hot sitz baths, aloes and iron pills and binocide of manganese two grains in pills thrice daily should be administered. In lactational insanity immediate weaning of the baby is indicated. Williams feels that it is a good deal of an obstetric problem because of its presumably infective causes and we must search for the underlying etiologic factor for the cause. The symptomatic treatment he refers to only generally and suggests, if immediate improvement is not seen, to refer to a psychiatrist.

Tweedy & Wrench logically prescribe rest, food, excretion, and exercise as the key notes of prevention and cure. When the attack is established, use forty grains of bromide and ten of chloral every two hours. With acute mania, hyoscine is the best stand-by.

Lewis of Chicago gives many practical suggestions.

The deduction and conclusions that we may draw from this summary of the literature and from our own experience are these:

First: We have a definite clinical entity.

Second: Its etiology is in a great number of cases toxic, either bacterial or chemical, except in the lactational type which is one of general impoverishment of the body from prolonged nursing.

Third: It occurs in about one in 2,000 labors at present and it causes about 6 per cent of all insanity in the female.

Fourth: Its types, which I am poorly equipped to discuss technically, I will group briefly as manias and melancholias. At first thought we would expect the former to be the strictly puerperal type, and the latter the lactational and in general this classification is correct.

Fifth: Symptoms of the former have a more or less sudden onset frequently preceded by a febrile disturbance and a pulse that either fails to fall as the temperature does or even climbs higher. There may or may not have been foul lochia previously. The onset is characterized by hallu-

cinations, sexual and religious excitement, suicidal and infanticidal promptings, the latter more common in the lactational type.

Sixth: The prognosis is fairly good and as time goes on is improving, especially for the class of cases due to infections or intoxications.

Seventh: Treatment will tax all our ingenuity. General bodily health must be closely watched. The cause of infections must be met on surgical principles, as in any other infection, and the emunctories must be carefully looked after in this class, and, in those of chemical origin, its particular cause must be run down and met, whether in liver, intestine or kidney.

Rest must be obtained in the proper way. Restraint without resistance must be used, a constant attendant rather than a straight jacket. Pleasant surroundings make for mental rest as well.

Food must be nutritious and easily assimilated and its elimination must be watched and the kidneys stimulated with all the means at our command.

Exercise to the point of stimulation, but not fatigue, is as necessary as in any disease.

Medication must be studied very thoroughly. Of the hypnotics, hyoscine is the best. The suggestion of Berry Hart as to the emmenagogues is well worth a trial.

In the lactational type, we have profound exhaustion to deal with, and rest, more than exercise, will be indicated, but the most important indication is immediate weaning for the mother's sake; while in the early puerperal type, weaning is indicated to remove from the mother all thoughts of the labor and also to avoid infanticide. If early improvement is not observed, a psychiatrist should be consulted and personally, I feel that a joint conduct of the case, particularly the early ones, of obstetrician and psychiatrist will give the most happy results to these unfortunates—*Long Island Medical Journal*.

Extracts from Home and Foreign Journals

SURGICAL

INDICATIONS FOR OPERATION IN EXOPHTHALMIC GOITER.

Prof. H. Starck states that among 450 cases of Basedow's disease observed in the last few years sixty-nine were operated on by prominent surgeons, nearly all of which had been seen by him before the operation. From his observations he concludes: 1. Operation effected a cure (*i. e.*, complete physical and mental restoration) in approximately 30 per cent, improvement in 35 to 40 per cent, while in the other cases it proved ineffective or was followed by a change for the worse. 2. The operative mortality was 9 per cent (6 deaths in sixty-nine cases). Kocher had a mortality of only 3.1 per cent; according to others, however, it is 12 per cent. 3. If the surgeon accepts the view that a persistent thymus is responsible for a fatal outcome, although no positive evidence is at hand, he must determine whether this gland be present before resorting to resection of the struma; if it is, ligation of the vessels or resection of the thymus is to be considered. 4. The choice of the anesthetic is of great importance as to the outcome of the operation. The Basedow's type with predominating nervous, myasthenic and psychic symptoms is best operated on under general anesthesia, the other cases under local anesthesia. 5. Operation is contraindicated in status lymphaticus; if it can not be avoided, a local anesthetic should be employed. 6. In many cases the operation only lays the foundation for successful internal treatment. 7. The most unfavorable time for operation is that of increasing intensity of the disease; the most favorable, the stage of latency, or arrest. 8. The most suitable cases for operation are those in which there is a "goiter heart;" also some cases with classical Basedow's symptoms.

Only slight success is to be expected in the presence of a nervous-myasthenic-psychic symptom complex with but moderate cardiovascular symptoms. 9. The size of the goiter as determined by palpation is no criterion as regards the question of operation. Small, soft goiters are often of greater significance than large, firm ones. 10. The blood picture also is of no importance in considering the operative treatment, since it is not materially influenced by operation. —*The International Journal of Surgery.*

ACUTE APPENDICITIS.

John B. Deaver says the important points that have to be learned about this disease are that it is the most common intra-abdominal inflammation; that indigestion is often a forerunner, preparing the soil for the infection; that being an infectious disease and the most common infectious disease of the abdominal cavity, the appendix constitutes the avenue by way of which infection most commonly invades the upper abdomen. He considers acute appendicitis from the anatomical, etiological, bacteriological, and pathological standpoints; the points of the latter touched upon chiefly are in connection with peritonitis and abscess. The portions of the peritoneum most susceptible to infection are the diaphragmatic and enteronic. The differential points between a diffuse and a localized peritonitis are that in the former the pain is greater, the abdominal breathing more restricted and the rigidity and tenderness embrace a greater area of the overlying abdominal wall; upon auscultation the peristaltic waves are heard over a greater area and the abdominal breathing is less marked in the diffuse than in the localizing variety. In the early stages the tenderness and rigidity are best elicited by slight pressure. If the symptoms and signs, namely, pain, vomiting, fever, tenderness, and rigidity are interrupted, the diagnosis of acute appendicitis may be considered doubtful. Leucocytosis is of value as a confirmatory symptom when the patient reacts well to

the infection. The most important point in the differential diagnosis is the distinction between acute cholecystitis and acute appendicitis. Acute pancreatitis, perforated ulcer, or perforated gall bladder, present symptoms so much more intense than those of acute appendicitis that they should not give rise to confusion. As to the treatment, the writer states most emphatically that in all cases of acute abdominal pain nothing in the shape of a purgative or aperient medicine should be given until the cause of the pain is understood. In his experience purgatives play the greatest amount of havoc in acute abdominal conditions; 90 per cent of cases of perforating peritonitis have been purged. In the presence of peritonitis and in the absence of operation the patient should be set up in bed, given nothing by mouth, not even cracked ice; he should be given enteroclysis by the Murphy method and have an icebag over the site of rigidity and tenderness; the icebag is useful to prevent the doctor from making too many examinations and for its local anesthetic affect. The idea that it has any effect in controlling inflammation is fallacious. In diffuse peritonitis, in the absence of peristalsis and of a definite point of localization, it is the writer's practice to defer operation until the peritonitis becomes a localized or localizing one. The principles of anatomical and physiological rest, assisting the functions of the peritoneum, absorption and exudation, are defeated by any treatment other than the foregoing.—*Medical Record*.

EFFECT OF PHLORIDZIN ON TUMORS.

In the experiments cited by Wood and McLean the animals were injected with phloridzin in suspension in olive oil. Treatment was begun, as a rule, seventeen days after inoculation. All treated animals were kept rigidly on a diet of meat and lard, while the control animals were given the regular laboratory diet of dry bread and vegetable. From time to time, at the end of the second or third day period following injections of the phloridzin, the collected urines were

examined for sugar with Fehling's solution and were found to give a positive reaction in the case of the treated animals on the carbohydrate-free diet, while the urine of the untreated animals as well as a phloridzin solution gave a negative reaction. The animals under treatment rapidly became emaciated, the fur roughened, and they appeared to be very ill; a great many died soon after beginning of the treatment. For the experiments with the Buffalo rat sarcoma, 324 animals were inoculated, with 90.4 per cent of "takes." For the experiments with mouse sarcoma No. 396 mice were inoculated, with 97.7 per cent positive. Among the mice bearing spontaneous tumors and Crocker Fund mouse sarcoma No. 180, there were no cases of absorption of the tumor under treatment. The Buffalo rat sarcoma showed a much smaller percentage of absorption among the treated animals than among the controls, 37 per cent as compared with 58.4 per cent. In the majority of the experiments the growth among the treated animals was much more vigorous than that among the controls. Considering the very great variability of growth of the Buffalo rat sarcoma, as well as the high percentage of cases of spontaneous absorption occurring constantly, but with a great irregularity in different series of animals, the futility of using this tumor for therapeutic experiments or of basing conclusions on such investigations, is at once evident. Any "cures" obtained in work with the Buffalo rat sarcoma must be ascribed to spontaneous absorption rather than to the effect of the therapeutic agent.—*The Journal of the Amer. Med. Asso.*

DIAGNOSIS OF EXTENT OF INJURY IN CASES OF ABDOMINAL WOUNDS.

Kausch has found that it is impossible to determine whether or not the intestines or other viscera have been injured, by the discovery of free air in the abdominal cavity. This is an almost certain sign of perforation, according to his experience, which has been wide and varied. The army

corps to which he is consulting surgeon has served in turn in Belgium and France, Alsac, Galicia, Russian Poland and Serbia. A very small incision will reveal whether there is free air in the abdominal cavity. He makes the exploratory buttonhole for the purpose in the epigastrium under local or general anesthesia. The thicker the abdominal wall, the longer the incision, from 1 to 3 cm. The peritoneum need be only punctured; a pinhead hole is enough. If air streams out, he proceeds at once to a regular laparotomy. If not, the patient is spared a major operation for the time being at least. He has had cases in which a bullet passed through the abdomen, front and rear, without perforating the gastro-intestinal tract. When there was perforation, death was inevitable without operative relief, and he is convinced that his prompt operating saved a certain proportion of such cases. No one was ever harmed by the operation after an abdominal wound. Kausch was kept informed by telephone where fighting was under way, so that he was on the spot, ready to operate, before the wounded began to come in.—*The Journal of the Amer. Med. Asso.*

MEDICAL

DIPHTHERIA CARRIERS.

A recent investigation of diphtheria carriers in Detroit is reported by Goldberger, Williams and Hachtel, in Bulletin No. 101, of the Hygienic Laboratories, of the United States Public Health Service. The problem of diphtheria carriers has become one of considerable importance and has been given special prominence of recent years by the studies of von Scholly, Moss, and Nuttall and Graham Smith. The writers of the report mentioned above studied 4,093 people in the city of Detroit, and found that 0.928 per cent harbored bacilli identical morphologically with the Klebs-Loeffler bacillus. This figure is rather lower than those of some other

investigators, but would indicate, as stated by the writers, that there were from 5,000 to 6,000 diphtheria carriers in the city of Detroit.

Of nineteen cultures isolated from nineteen of the carriers, only two were virulent, which would indicate that only 0.097 per cent of the people examined carried organisms capable of producing disease. An interesting further point is that the bacillus *Hoffmanii* was present in at least 41.9 per cent of over 2,000 individuals examined, and that the forty-nine cultures morphologically identified as bacillus *Hoffmanii* were avirulent. This would confirm the impression gained, we believe, by most experienced laboratory workers, that a true *Hoffmanii* can be distinguished with considerable certainty from a Klebs-Loeffler bacillus by morphological examination alone, and that its significance is probably that of a frequently present saprophyte of the throat and pharynx. The studies of Goldberger, Williams and Hatchel also indicate that in examining for diphtheria carriers, it is best not to confine oneself either to the nose or throat, but that cultures should be taken from both places in every case. *The Journal of Laboratory and Clinical Medicine.*

INJURIES FROM HOT WATER BOTTLE.

In an action against a sanatorium and its superintendent it appeared that the plaintiff had employed the superintendent to perform an operation for hernia. After the operation was performed the doctor carried the plaintiff to the room assigned to him and placed him in bed while still under the influence of an anesthetic. A rubber bottle, filled with very hot water, had been placed in the bed, and the unconscious man was laid upon it, and was burned on his back severely. The witnesses described the wound as being 15 to 18 inches in diameter. He also received a smaller burn on his side; the attendants, believing that his struggles on becoming conscious were due to delirium, having held him down on the bed for a time and then turned him on his side. He was

under treatment from the burns for a number of months and suffered excruciating pain. The jury found the doctor, but not the sanatorium, guilty, and rendered a verdict for \$5,000, which the trial court reduced to \$2,500. On appeal, the court said that it did not mean to condemn the doctor, nor even to say that he was in fact negligent; but, taking the situation as it found it, and as the jury observed it, there was evidence to justify them in finding that the doctor had not exercised proper care; and, having so found, the court had no right to dispute the verdict. It also held that the damages awarded were not excessive.—Grosshart v. Shaffer, Oklahoma Supreme Court, 152 Pac. 441.—*Medical Record*.

HEART INHIBITION DURING VOMITING.

Gam says that while experimenting on intrathoracic and intra-abdominal pressures, the blood pressure was observed to fall during vomiting. A series of experiments were performed to determine the cause of this fall. In all experiments the blood pressure, the intrathoracic pressure and the movements of the abdominal wall were recorded. Vomiting was induced in some cases by means of apomorphin; in others by filling the stomach with hot salt solution, hot soap suds, copper sulphate solution, etc. In every case a high negative pressure was observed in the thorax during the act. The pressure would fluctuate rapidly from zero to twenty-five or thirty centimeters (water) of negative pressure. The blood pressure, however, always fell, sometimes to less than half its former level. The fall in blood pressure was found to be due to a vagus inhibition of the heart, for on cutting the vagi while the vomiting was taking place, and while the blood pressure was at its lowest, there was an immediate increase in heart rate and rise to above the normal in blood pressure. Furthermore, when the vomiting was induced after the vagi had been cut, there was a rise instead of a fall in blood pressure.—*The Journal of the Amer. Med. Assn.*

HOME TREATMENT OF SCIATICA.

Pöppelmann suggests the following method for the home treatment of sciatica. A pail of boiling water is placed in a tub large enough to permit an old chair to be set in it. A tablespoonful of ol. pini sylvestris is poured into the boiling water, the patient seated on the chair with his feet outside the tub, and two sheets pinned around his neck, so that they reach the floor on all sides, covering him completely but leaving the head free. In this steam bath the patient is allowed to remain for twenty minutes. He is then rubbed briskly with a cold wet cloth, dried and put to bed for an hour. If necessary, especially with elderly people, cold applications may be made to the head during the process of steaming. Internally, iodides are given, preferably iodine-vasogen, 7-8 drops three times daily. The bowels must be kept freely open. The baths are given every other day, and five to fifteen sittings are required for a cure. In the author's hands a successful outcome has been practically uniform.—*Critic and Guide*.

USE OF CAFFEIN IN DIGITALIS ARRHYTHMIAS.

In the *American Journal of the Medical Sciences* for September, 1915, Barton asserts that all the irregularities of the heart-beat which are brought about by digitalis tend to be removed by caffeine. Although in many cases digitalis arrhythmia will spontaneously disappear when the drug is stopped, instances arise, unfortunately too common, in which after prolonged digitalis administration the conductive system is so depressed that serious results may arise. Under these circumstances the administration of caffeine will be of service and is therefore strongly indicated. The action appears to be due to the increase in irritability of the conduction system produced by the caffeine, which antagonizes and finally overcomes the depressing effects which digitalis

exerts upon the auriculo-ventricular bundle.—*The Therapeutic Gazette*.

THE EFFECT OF CAFFEINE UPON THE BLOOD-FLOW IN NORMAL HUMAN SUBJECTS.

The *Journal of Pharmacology and Experimental Therapeutics*, for November, 1915, contains a report of a research by Means and Newburgh in which they report experiments upon the bloodflow of two normal subjects during rest, and of one subject during muscular work.

The action of caffeine on the blood-flow was studied in both subjects while at rest, and in one during work.

The average blood-flow of the two subjects at rest was 4.5 and 4.0 liters per minute; the systolic outputs were 61 and 57 cc.; the coefficients of utilization of the oxygen-carrying capacity of the blood were 31 per cent and 41 per cent.

With increasing work a steady rise in blood-flow, oxygen absorption, and pulmonary ventilation was found. The increase in blood-flow was produced first by an increase in systolic output until a maximum of 118 cc. was reached, beyond that by an increase in pulse-rate. This suggested that the supply of venous blood in this subject becomes "adequate" at about 640 kg. meters of work per minute. The coefficient of utilization showed a slight rise during work, indicating a slightly greater economy of the circulation.

After giving caffeine during rest, or when the supply of venous blood is "inadequate," evidence of drug action was found with both subjects. This action consisted in an increase in total blood-flow without a corresponding increase in oxygen absorption, and hence a decreased coefficient of utilization of the oxygen-carrying capacity of the blood. The pulse-rate was unchanged. Consequently the systolic output was increased.

During work probably no other action was obtained from caffeine than possibly an increase in pulse-rate, and consequently slight diminution in systolic output.

It is suggested that during rest when the supply of blood to the right heart is "inadequate", caffeine increases the blood-flow by increasing the venous supply through an action upon some mechanism outside the heart. When the supply becomes "adequate" or approaches adequacy, no such action is obtained.—*The Therapeutic Gazette*.

OBSTETRICAL

DIURESIS AND MILK FLOW.

There are observations on record which indicate that the secretion of milk may be influenced by a contemporaneous diuresis. Precisely what changes in the composition of the milk may be initiated in this way had not been determined until recently, when the question of the influence of specific diuretics on milk flow was investigated by Steenbock at the University of Wisconsin. He remarks that in view of the importance which heretofore unknown constituents of diets and rations have lately assumed, it is of the greatest interest to dissect the various factors normally operative in the body under ordinary conditions of diet. Steenbock found that urea, for example, administered in a diuretic dose, is able to decrease temporarily the flow of milk. On repeated administration, however, the increased intake of water which follows the impoverishment of the tissues with respect to water content balances the draft for water imposed by the diuretic, and the milk secretion comes back to normal. Other diuretic salts, like sodium chlorid, may be entirely unable to depress the milk secretion under normal circumstances, because they call forth a compensating thirst which simultaneously increases the water intake. In cases in which diuresis does lead to temporarily decreased flow of milk, the percentage of solids in the secretion is ordinarily increased, the fat being the principal variable. In ordinary experience, however, the composition of the milk may be regarded as

essentially unaltered by slight variations in renal activity.—*The Journal of the American Med. Asso.*

INDICATIONS AND CONTRAINDICATIONS FOR ABDOMINAL SECTION.

Dr. Ross McPherson (*Provid. Med. Jour.*) summarizes his views in the following conclusions: First Cesarean section is a very useful operation for removing the child from a pregnant woman at or near term in cases: (a) where there is a relative disproportion between the birth canal and the fetus, sufficiently large to make the birth difficult or impossible; (b) in cases of serious obstruction due to tumors, or deformities congenital or acquired; (c) a certain number of cases of placenta previa, convulsive toxemia, or occasionally organic disease. Second. The operation should not be decided upon except by a person whose training and experience in pelvic and abdominal examination is sufficiently large to warrant the acceptance of his judgment. Third. The operation should not be performed by anyone unless he be a skillful abdominal surgeon, preferably one who has given particular thought and attention to this subject. Fourth. A long labor, much handling and manipulation, especially in the presence of ruptured membranes, predispose the patient to infection of the peritoneal cavity, and fifth, therefore, intraperitoneal abdominal Cesarean section should not be undertaken under those conditions, with one exception, namely when the religious prejudices of the family demand the saving of the child at the expense of the mother, and then only in the presence of and with the advice of a consultant and a clergyman, after carefully explaining the situation to the family and obtaining their written consent to the procedure. Sixth. If the above demands and conditions are fulfilled the maternal mortality should be practically nothing, the morbidity negligible, the end result perfect, and with the exception of those cases undertaken solely in the interest of the mother, every child should be born alive.—*Medical Progress.*

TREATMENT OF OPHTHALMIA NEONATORUM.

G. A. Neuffer, in the *Journal of the South Carolina Medical Association* for February, 1915, states that he has met with universal success in this condition by means of the following treatment: A sixty-grain (4 gram) to the ounce (30 c.c.) solution of silver nitrate is at once applied to the conjunctiva and immediately precipitated with a solution of sodium chloride made by dissolving one teaspoonful of the salt in a glassful of water. This application is repeated once every twenty-four hours, until one is satisfied that the disease has been controlled. Only in extreme cases are more than two applications necessary, and often one proves sufficient. In addition, an ounce (30 grams) of boric acid is ordered dissolved in a quart (litre) of hot water and the solution kept constantly warm. With this the nurse or mother is instructed to wash out the eyes as often as any pus collects, even if this is required a hundred times a day. One drop of a one per cent solution of an organic silver preparation is dropped into each eye three times a day as long as there is any pus; after this an astringent lotion is substituted. The author also has squares of lint kept on a block of ice and applied constantly, with frequent renewals, for forty minutes in each hour. The treatment described should be applied both day and night until the condition has been mastered.—*New York Medical Journal*.

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at \$1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

SLOW DISSEMINATION OF KNOWLEDGE.

Charles Darwin, in his "Descent of Man," published in 1871, writes thus of the appendix: "It is occasionally quite absent, or again is largely developed. The passage is sometimes completely closed for half or two-thirds of its length, with the terminal part consisting of a flattened solid expansion. In the orang this appendage is long and convoluted: in man it arises from the end of the short cecum, and is commonly from four to five inches in length, being only about the third of an inch in diameter. Not only is it useless, but it is sometimes the cause of death, of which fact I have lately heard two instances: this is due to small, hard bodies, such as seeds, entering the passage, and causing inflammation."

But Darwin was not the first to recognize the uselessness and danger of the appendix, since M. C. Martins, in *Revue des Deux Mondes*, which was published in 1862, mentioned the fact that this rudiment sometimes caused death. Indeed it is said the ancient Egyptians knew the appendix became inflamed and caused death, but for this we can not vouch.

In spite of these *hints* of Martin and Darwin, physicians called the symptom syndrome of what is now known to be appendicitis, typhlitis or perityphlitis for years, although the cecum itself is seldom inflamed without some pathological change in the appendix. The latter structure, how-

ever, is often very badly diseased while the cecum is perfectly normal.

The first methodical operation for appendicitis was performed in 1886 by Reginald Fitz, and even today it is sometimes hard to persuade a patient to have this structure removed simply because recovery often occurs without operation.

EUGENICS.

The same author, Charles Darwin, in the same book, writes as follows: "Man scans with scrupulous care the character and pedigree of his horses, cattle, and dogs before he matches them; but when he comes to his own marriage he rarely, or never takes any such care. He is impelled by nearly the same motives as the lower animals, when they are left to their own free choice, though he is in so far superior to them that he highly values mental charms and virtues. On the other hand he is strongly attracted by mere wealth or rank. Yet he might, by selection, do something not only for the bodily constitution and frame of his offspring, but for their intellectual and moral qualities. Both sexes ought to refrain from marriage if they are in any marked degree inferior in body or mind; but such hopes are Utopian and will never be even partially realized until the laws of inheritance are thoroughly known. Everyone does good service who aids toward this end. When the principles of breeding and inheritance are better understood, we shall not hear ignorant members of our legislature rejecting with scorn a plan for ascertaining whether or not consanguineous marriages are injurious to man."

Though the above was written thirty-five years ago, little real progress has been made in eugenics. It is true we have laws against miscegenation and against certain consanguineous marriages; some States have passed and other States have attempted to pass, laws making certificates of health necessary before marriage licenses can be issued; if we mistake not, in some States the habitual criminal is unsexed, and in many States this question has been discussed, but

ignorance in regard to the laws of heredity is still the rule and not the exception.

Wealth and social position, rather than health and intellectuality, determine as many marriages today as when Darwin wrote, and America's highest legislative body has not yet repealed the law against the dissemination of knowledge of means to prevent conception. Yet too many children in poor families not only means dire poverty and unhappiness instead of comfort and happiness, but oftentimes desertion, divorce, forced immorality or crime. It is just as necessary to be able to limit the number of children so that each will at least get a good start in life as it is to bring healthy children into the world, since healthy children can not remain healthy and develop as well under unfavorable as under favorable conditions.

Did the law affect rich and poor alike it would not be so pernicious, but such is not the case, since the largest families in this country are found among the poor and ignorant, the very ones who can least afford to have many dependents. Without being so intended, it is class legislation. The healthy, well nourished and well educated class escapes, the poor, ill-nourished, and ignorant class bears the burden until this burden is shifted on society in the form of beggar, defective, imbecile or criminal.

If all the members of Congress made a tour of the tenement districts of New York or other large cities, saw the overworked fathers and overbred mothers, the ragged, ill-nourished and oftentimes diseased children, inquired into the total earnings of the family and the necessary expenses, ate of their bread and breathed their air, if our congressmen did this, then the fate of the law as it now stands would be sealed. But our congressmen are not going to make any such tour, they are not even going to inform themselves by study of the actual conditions, but will do something far easier by voting an appropriation for the study of hog cholera, the foot and mouth disease of cattle, the Texas cattle tick or some other measure of more apparent benefit to the

people—and the congressman. To vote on appropriations like the above can not weaken the legislator, to vote to repeal the present law might lose him a large following in some communities. Yet the repeal of the present law in regard to preventives is the first step in eugenics, and without the repeal the best efforts of the best men and women will accomplish but little.—*W. T. B.*

PUBLIC HEALTH SERVICE HOSPITALS CURB TRACHOMA.

The establishing of small trachoma hospitals in localities where this contagious disease of the eyes is prevalent presents the best solution of the trachoma problem, according to the statement contained in the annual report of the Surgeon General of the United States Public Health Service. The Service now has five trachoma hospitals in the three States of Kentucky, Virginia, and West Virginia, and so great has been the number of applicants for treatment that a waiting list has been established. In the past fiscal year 12,000 cases of trachoma have been treated, the larger proportion of which were cured, while those in which a cure was not effected have been greatly improved and rendered harmless to their associates. The great majority of these trachoma patients were people who lived in remote sections far removed from medical assistance, and who, but for the hospital care and treatment provided would have remained victims of the disease practically the remainder of their lives.

"When it is considered," the report of the Service states, "that thousands of persons suffering with trachoma, a dangerous contagious disease, would otherwise remain untreated, it is realized how farreaching results have been obtained through these trachoma hospitals and the other public health work done in this connection. It would be impossible to estimate with any degree of accuracy the number of people who have been saved from contracting this communicable disease by thus removing these thousands of foci of infection."

In addition to treating persons with the disease the hospitals have been used for educational work. Doctors and nurses have visited the homes of the patients and have explained how to prevent the development and recurrence of the disease. One thousand three hundred and eight such visits were made during the year in Kentucky alone. "It has taken some time," the report continues, "to educate the people afflicted with this disease to the importance of cleanliness and the use of simple hygienic measures in their daily life." That results have been obtained is evidenced by the noticeably better observance of hygienic precautions by those among whom the work has been done.

In addition to the hospital work, surveys were made in sixteen counties in Kentucky, especially among school children. Eighteen thousand and sixteen people were examined, 7 per cent being found to have trachoma. Similar inspections in certain localities of Arizona, Alabama, and Florida resulted in finding the disease present in from three to six children out of every hundred. Periodic examination of school children for the disease and the exclusion of the afflicted from the public schools, are two of the recommendations the Public Health Service lays emphasis upon.

One of the special features of the trachoma work was the giving of lectures and clinics before medical societies in various counties where trachoma hospitals could not be established. Patients were operated upon in the presence of physicians and the most modern methods of treatment demonstrated. Throughout, the purpose has been to stimulate local interest in taking up the campaign to eradicate trachoma.

HOW THE GOVERNMENT IS MEETING THE MALARIA PROBLEM.

Four per cent of the inhabitants of certain sections of the South have malaria. This estimate, based on the reporting of 204,881 cases during 1914, has led the United States Pub-

lic Health Service to give increased attention to the malaria problem, according to the annual report of the Surgeon General. Of 13,526 blood specimens examined by Government officers during the year, 1,797 showed malarial infection. The infection rate among white persons was above 8 per cent, and among colored persons 20 per cent. In two counties in the Yazoo Valley, forty out of every one hundred inhabitants presented evidence of the disease.

Striking as the above figures are they are not more remarkable than those relating to the reduction in the incidence of the disease following surveys of the Public Health Service at thirty-four places in nearly every State of the South. In some instances from an incidence of fifteen per cent, in 1914, a reduction has been accomplished to less than 4 or 5 per cent in 1915.

One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2,000 Anopheline mosquitos in malarious districts were dissected, during the early spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the southern states ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinine previous to the middle of May, thus preventing any infection from chronic sufferers reaching the mosquitoes and being transmitted by them to other persons.

Although quinine remains the best means of treating malaria, and is also of marked benefit in preventing infection, the eradication of the disease as a whole rests upon the destruction of the breeding places of Anopheline mosquitoes. The Public Health Service, therefore, is urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding places, and

the stocking of streams with top-feeding minnows, are further recommended. The Service also gives advice regarding screening, and other preventive measures as a part of the educational campaigns conducted in sections of infected territory.

This study is typical of the scientific investigations which are being carried out by the Public Health Service, all of which have a direct bearing on eradicating the disease. The malaria work now includes the collection of morbidity data, malaria surveys, demonstration work, scientific field and laboratory studies, educational campaigns, and special studies of impounded water and drainage projects.

Reviews and Book Notices

"Pellagra." By George M. Niles, M.D., Gastro-enterologist to the Georgia Baptist Hospital, Wesley Memorial Hospital and Atlanta Hospital, Atlanta, Ga. Octavo of 261 pages, illustrated. Philadelphia and London. W. B. Saunders Co., 1916. Cloth, \$3 net. W. B. Saunders Co., Philadelphia. London.

We are in receipt of the second edition of this work upon a subject that has of late attracted a great deal of attention from the profession. Pellagra has in recent years sprang up in an unaccountable manner, especially in the southern section of the United State, and it behooves every practicing physician to equip himself with such knowledge as will enable him to recognize the disease when encountered in his practice and to handle it in a scientific manner. This work in its second edition, although following the appearance of the first edition so closely has undergone many changes and had numerous additions so that it has been brought fully up with the present state of knowledge. The chapter on etiology contains the results of the recent investigations of Dr. Joseph Goldberger, Special U. S. Agent for the study of the disease, and Thompson-McFadden Commission on Pellagra. The work is that of a southern physician and should receive the warm support of southern physicians everywhere.

"A Practical Treatise on Infant Feeding and Allied Topics." For Physicians and Students. By Harry Lowenberg, A.M., M.D., Assistant Professor of Pediatrics, Medico-Chirurgical College of Philadelphia; Pediatricist to the Mt. Sinai Hospital; Pediatricist to the Jewish Hospital; Assistant Pediatricist to the Medico-Chirurgical Hospital and to the Philadelphia General Hospital; Formerly Instructor of Pediatrics, Jefferson Medical College. Illustrated with Sixty-four Text Engravings and Thirty Original Full Page Plates, Eleven of which are in color. Philadelphia. F. A. Davis Co., Publishers. English Depot. Stanley Phillips, London. 1916.

Our thanks are due the obliging publishers for a copy of this exceedingly valuable book. The author's long experience and intimate acquaintance with the subjects treated

of eminently qualify him to present a work that will prove of most valuable assistance to physician and students. The work is eminently practical and presents throughout the subject matter in an easily accessible form. The arrangement of the text is systematically perfect and only such material is used as may render the work available for the needs of practitioners and students. The importance of breast-feeding is emphasized and artificial alimentation discussed thoroughly so as to furnish the best schemes for obtaining the best results. The article upon "Surgical Treatment of Infantile Pyloric Obstruction" is by the celebrated surgeon, Dr. John B. Deaver, a chapter that adds much to the value of the work. A feature of the work is the presentation of a number of plates showing in colors the appearance of stools in various conditions of alimentary disturbances. We are greatly pleased with this work and can conscientiously recommend it to students and practitioners.

"Annual Report of the Surgeon General of the Public Health Service of the United States." For the Fiscal Year 1911. Washington. Government Printing Office. 1914.

This is the forty-third annual report of the operations of the Public Health Service, in the one hundred and sixteenth year of its existence, issued by the Surgeon General of the Public Health Service of the United States. This treats of the seven divisions of the bureau under the following heads, viz. (1) Scientific Research and Sanitation; (2) Foreign and Insular Quarantine and Immigration; (3) Domestic (Interstate) Quarantine; (4) Sanitary Reports and Statistics; (5) Marine Hospitals and Relief; (6) Personnel and Accounts; (7) Miscellaneous. The report contains a great deal of interest to the general reader, especially to those interested in sanitary matters, and shows the methodical and systematic manner in which the affairs of the bureau are administered.

Publisher's Department

"IN PARTICULAR CASES."

Therapeutic efficiency in the use of the bromides is often as dependent on the avoidance of untoward effects as on the attainments of maximum physiologic activity. For this reason Peacock's Bromides offer the most satisfactory bromide therapy, for not only does this happy combination of carefully selected bromide salts insure all the benefits of the most active bromide preparation, but it does so with the great advantage that gastric disturbance and all tendencies to bromism are reduced to a minimum. This is why in "particular cases" so many physicians are in the habit of insisting on the use of Peacock's Bromides.

Notwithstanding the large number of Hypophosphites on the market, it is quite difficult to obtain a uniform and reliable syrup. "Robinson's" is a highly elegant preparation, and possesses an advantage over some others, in that it holds the various salts, including iron, quinine, and strychnine, etc., in perfect solution, and is not liable to the formation of fungus growths. (See advertisement in this issue.)

"Many cases of acute coryza and naso-pharyngeal irritation are often due primarily to the streptococcus rheumaticus and respond to the usual rheumatic therapy."

In these cases commonly called "colds," generally deep-seated, painful and exhausting, Tongaline mitigates the congestion and by rapid elimination of the poison or germs, promptly relieves a condition often very obstinate and if not corrected within a reasonable time, attended with serious results and always with a tendency to become chronic.

For special stimulation to the kidneys, Tongaline and

Lithia Tablets; if malaria is indicated, Tongaline and Quinine Tablets.

NOT A DIGESTIVE SUBSTITUTE.

The amount of actual harm done with the best intention, by continually supplying the digestive organs with digestants, or ferments, instead of encouraging them to generate their own, is doubtless greater than we realize. It is not very often that one need order predigested food for a patient, although occasions may and do present themselves when this is advisable. But the indiscriminate use of pepsins and similiar substances from the vegetable kingdom, in the management of many patients with weakened digestive powers, is scarcely to be justified. A much more useful remedy, because of its being a true stimulator to the digestive functions, gastric and intestinal, is Seng. This well known preparation contains the active principles of Panax (Ginseng), and is especially useful because it stimulates the physiologic activity of the digestive glands and thus "helps them to help themselves"—obviously the most desirable therapeutics in all functional cases. It should be remembered, therefore, that Seng is not a ferment to digest food which weakened organs can not care for in their natural manner. Instead, its action is to restore tone and vigor to the secretory structures so that they are able to evolve and supply their own ferments. Seng is a very agreeable remedy to take, and its benefits are manifested in surprisingly short order. In convalescence from fevers or diseases impairing the digestive functions it is unquestionably one of the most efficient remedies being used by medical men today.

INTEROL.

The world is full of fallacies—It is fed upon half truths. It drinks in sophistry and then wonder is expressed that the millenium is so long deferred.

Take for instance the unfortunat use of the terms "expensive" and "high-priced" or of "costly" and "cheap."

Price—be it high or low, is what one *pays*.

It has nothing to do with what is received.

Quality on the other hand, is what one gets, or fails to get. Service ditto.

A useless, or inferior article or service, even when bought for a low price, is expensive and costly!

On the other hand, the better or higher the Quality or the Service that is obtainable, the higher the price—which is a great natural law. Hence, high-priced should, and usually does men, high quality or service.

In fact, a moment's reflection will show that the impression created in the mind of a person of average intelligence, by the word "cheap" applied to a person or a thing, suggests inferiority.

A cheap person or thing is apt to prove the most expensive. A high-priced person or thing usually turns out to be the most economical.

And, it is a most important fact that this applies with especial force to therapeutic agents of any kind intended for use by the physician, and with fulminant emphasis to drugs or agents that have to be put into the human body.

The physician who hesitates or is influenced by "high price", provided he knows the reputation and standing of the parties marketing the product, is false to his obligation to himself and to his patient.

All of which applies with especial force to mineral oil and particularly to Interol.

ELEGANT PHARMACEUTICAL SPECIALTIES

Attention is called to the **EXCELLENCE** and **VALUABLE THERAPEUTIC PROPERTIES** of these **PREPARATIONS**

Robinson's Hypophosphites

NUTRITIVE, TONIC, ALTERATIVE.

A STANDARD REMEDY in the treatment of Pulmonary Phthisis, Bronchitis, Scrofulous Taint, General Debility, etc. Stimulates Digestion, promotes Assimilation.

B Each fluidounce contains:

Hypophosphites Soda	- - -	2	grains
" Lime	- - -	1½	"
" Iron	- - -	1½	"
" Quinine	- - -	¾	"
" Manganese	- - -	1½	"
" Strychnine	- - -	1-16	"

DOSE—One to four fluidrachms.

6 oz. Bottles, 50 Cents.

Pint Bottles, \$1.00.

This preparation does not precipitate—retains all the salts in perfect solution.

Robinson's LIME JUICE and PEPSIN

Pure Concentrated Pepsin combined with Pure Lime Juice.

An exceedingly valuable Combination in cases of Dyspepsia, Indigestion, Biliousness, Heartburn and Mal-Assimilation.

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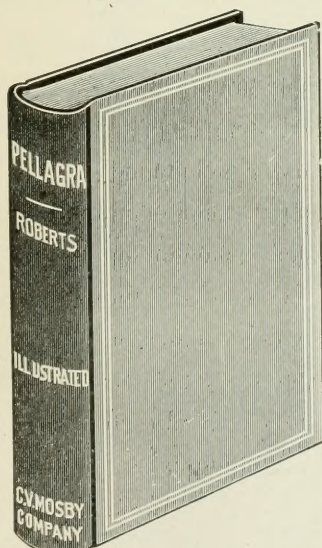
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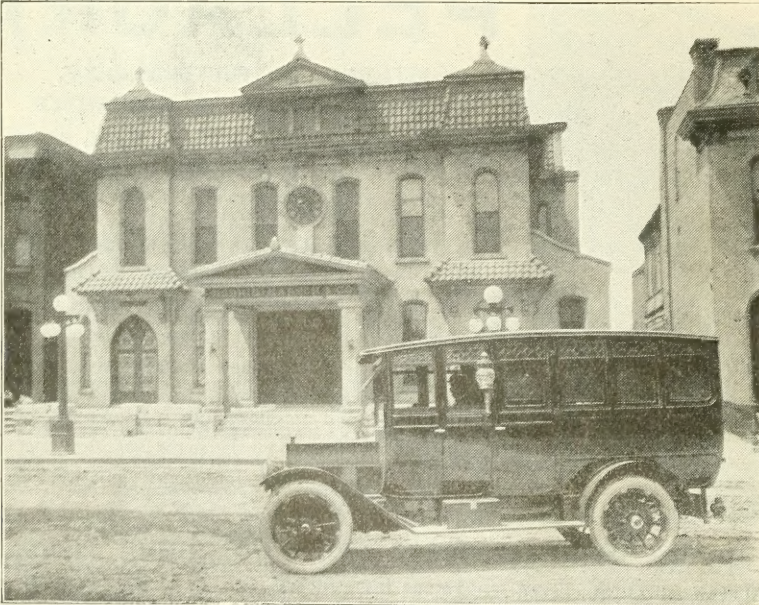
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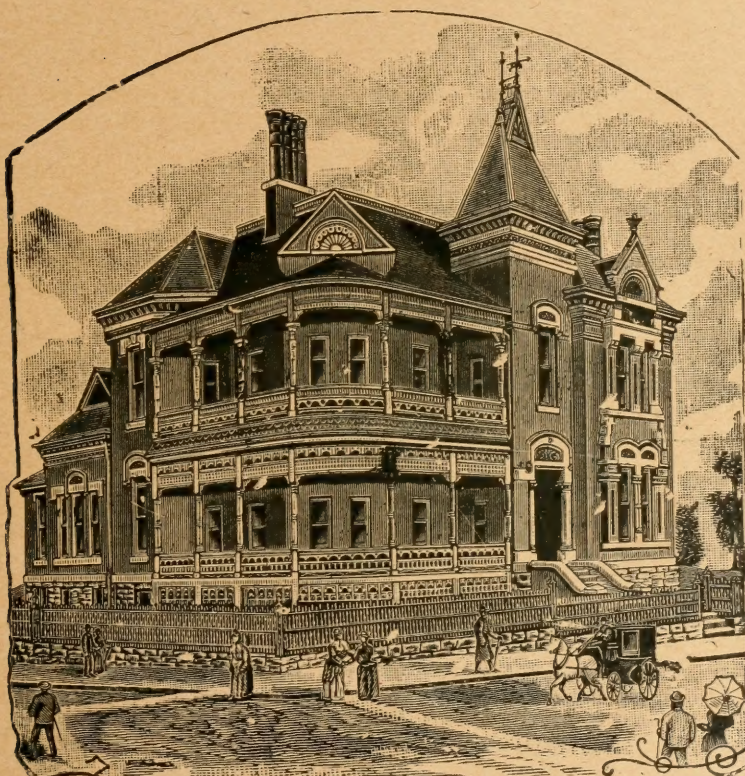
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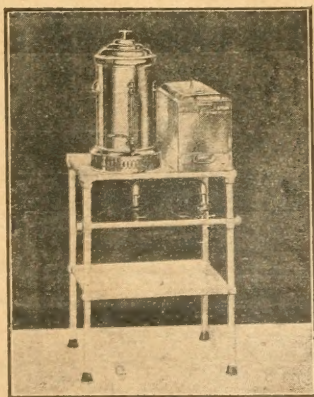
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